

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) A connector having a connecting face, comprising:
conductors connectable through the connecting face, the conductors including upper and lower surfaces; and
a housing substantially enclosing the conductors and including first, second and third sides, the first side coinciding with the connecting face, the second and third sides including openings on opposite sides of the housing an opening on a first side other than the front connecting face, and an opening on an opposite second side that together form a passageway extending completely through the connector from the first side to the second side to the third side for promoting air flow across the upper and lower surfaces of the conductors and through the housing.

2. (Currently amended) A connector according to claim 1 including a shroud substantially enclosing the housing fins coupled to the conductors and extending out of at least one of the housing openings.

3. (Currently amended) A connector according to claim 1 including openings on opposite sides of the housing for passing air through a first one of the openings, over the upper and lower surfaces of the conductors in parallel planar passageways, and out a second one of the openings.

4. (Currently amended) A connector according to claim 1 including an air flow control device configured to direct air through openings in a circuit board and into one of the housing openings.

5. (Previously presented) A connector according to claim 4 wherein the air flow control device includes an air intake vent configured to direct air from underneath a circuit board up through vias electrically connected to a circuit board and into one of the housing openings.

6. (Currently amended) A connector according to claim 5 including conductor pins that are inserted in some of the vias, wherein the air flow is directed through at least some of the vias not including conductor pins inserted therein.

7. (Currently amended) A connector according to claim 4 wherein the air flow control device includes an air intake vent located below the housing and below the circuit board.

8. (Currently amended) A connector according to claim 7 including an exhaust vent configured to vent air in a direction offset and substantially parallel to the air directed towards the intake vent, wherein the intake and exhaust vents are located in a shroud substantially enclosing the housing.

9. (Previously presented) A connector according to claim 4 including vias electrically connected to a power plane on a printed circuit board, the vias located inside the air flow

control device for directing air from underneath the circuit board up through the vias and across the conductors in the connector.

10. (Currently amended) A heat removal system, comprising:

a circuit board power connector~~having including~~ electrical contacts for inserting into ~~mounting a first set of contact~~ holes electrically connected to a circuit board; and

a device attached over the circuit board power connector for directing air from underneath the circuit board up through ~~the mounting a second set of contact~~ holes, through the power connector and out an output vent for directing heat away from the power connector.

11. (Currently amended) A heat removal system according to claim 10 including an air intake vent located on an underside of the printed circuit board for directing air up through ~~the mounting the second set of contact~~ holes in the printed circuit board.

12. (Currently amended) A heat removal system, comprising:

a device~~configured to attach~~ attached over a circuit board power connector and including an output vent for directing heat away from the power connector;

an air intake vent located on an underside of the printed circuit board for directing air up through holes in the printed circuit board and into the device; and

a hinge that couples the device with the air intake vent.

13. (Canceled)

14. (Currently amended) A heat removal system according to claim 10 including openings in a power connector, the device directing the air flow into a first one of the openings, through parallel passageways formed between upper and lower surfaces of conductors housed in the connector, out a second one of the openings, and out the output vent.

15. (Currently amended) A heat removal system according to claim 14 wherein the air directed out the output vent is substantially parallel to the air directed through the conductors including fins on the conductors extending out of at least one of the openings.

16. (Currently amended) A heat removal system according to claim 10 wherein the air directed out the output vent is substantially perpendicular to the air directed through the second set of contact holes including a fan located next to the air exhaust for sucking air out of the output vent.

17. (Currently amended) An air flow control device for cooling a circuit board power connector, comprising:

- a unit for containing a circuit board power connector;
- an air intake vent for directing air into the unit;
- an air outtake vent for directing the air out of the unit; and
- conductors arranged to direct the promote air flow through the power connector in parallel channels exposing a majority of a surface area of the conductors.

18. (Currently amended) An air flow control device according to claim 17 ~~including openings on opposite sides of the power connector wherein the air intake vent is located on a side of the unit opposite that of the air outtake vent.~~

19. (Currently amended) An air flow control device according to claim 18 wherein the air intake vent is located below the conductors including heat sink fins thermally coupled to the conductors in the power connector and extending out of at least one of the openings.

20. (Currently amended) An air flow control device according to claim 17 including conductor connections for inserting into vias electrically coupled to a circuit board power plane ~~and wherein vias not including conductor connections inserted therein provide providing~~ air flow into the unit.

21. (Currently amended) A method for removing heat, comprising:
directing an air flow from beneath a circuit board through a first set of electrically coupled mounting contact holes located in the circuit board; and
circulating the air past electrical contacts inserted in a second set of the electrically coupled mounting contact holes located in the circuit board.

22. (Currently amended) A method according to claim ~~21~~ 24 including exhausting the air in a direction substantially parallel to the air circulated through the conductors and offset to the air flow beneath the circuit board.

23. (Currently amended) A method according to claim 22 wherein the air circulated through the conductors is substantially perpendicular to the air flow directed through the contact holes ~~is exhausted above the circuit board.~~

24. (Currently amended) A method according to claim 21 including circulating the air through parallel passageways formed between upper and lower surfaces of conductors located in a power device ~~with electrical contacts.~~

25. (Currently amended) A connector, comprising:

conductors;

a housing containing the conductors; and

an air flow control device substantially enclosing the housing ~~having~~ including an air intake vent on one side for promoting air flow through a circuit board into the housing and across parallel passageways exposing upper and lower surfaces of the conductors ~~and further having an exhaust vent on another side for exhausting the air flow in a direction offset and substantially parallel to the air flow directed towards the air intake vent.~~

26. (Currently amended) A connector according to claim 25 including an exhaust vent located on another side of the air flow control device for exhausting the air flow in a direction parallel to the passageways ~~openings on opposite sides of the housing for passing air through a first one of the openings, over the conductors in parallel planar passageways, and out a second one of the openings.~~

27. (Currently amended) A connector according to claim 26 wherein the passageways are formed from upper and lower surfaces of the conductors ~~air intake vent is configured to~~

~~direct air from underneath a circuit board up through vias electrically connected to the circuit board and into the first one of the openings, and the exhaust vent is configured to exhaust the directed air on a top side of the circuit board out away from the conductors.~~

28. (Currently amended) A connector according to claim ~~27~~ 25 including vias connected to the circuit board, wherein conductor contact points ~~that~~ are inserted in some of the vias, and wherein other vias allow air flow through the circuit board.

29. (Currently amended) A connector according to claim 1 including parallel airways formed between the upper and lower surfaces of the conductors for channeling the air flow.

30. (Currently amended) A connector according to claim 29 wherein the airways extend through the housing including mounting pins oriented perpendicular to the conductors for inserting into a circuit board.

31. (Currently amended) A connector according to claim 30 wherein the airways expose a majority of a surface area of the conductors ~~conductors are stacked in increasing size from a bottom conductor nearest the circuit board to a top conductor.~~

32. (Previously presented) The connector according to claim 1 wherein the conductors are arranged as vertically stacked blades spaced apart by horizontal channels extending from the first side of the housing to the second side of the housing, the first and second openings allowing air to pass in through the opening on the first side of the housing, through the horizontal channels over both a top and bottom surface of the vertically stacked conductor blades, and pass out the opening in the second side of the housing.